INCINERATOR PROCEDURES

I. PURPOSE

To specify requirements for permit approval of incinerator installation and operation for new and modified units not subject to NSPS, NESHAP or 9 VAC 5-50 Article 6, Standards of Performance for Regulated Medical Waste Incinerators.

THIS PROCEDURE DOES NOT COVER

1. Hospital/Medical/Infectious Waste Incinerators
2. Large Waste Incinerators (> 2000 pounds per hour)
3. Hazardous Waste Incinerators
4. Incinerators with fuel burners 10 x 10^6 Btu/hr or larger when such burning is done to produce steam.
5. Sewage sludge incineration
6. Radionuclide Incineration

II. REFERENCE

9 VAC 5 Chapter 50 (Standards for New and Modified Sources)

9 VAC 5 Chapter 50, Article 6 (Standards of Performance for Regulated Medical Waste Incinerators)

9 VAC 5 Chapter 80 (Permits for New and Modified Sources)

40 CFR 60 Subpart E, Standards of Performance for Incinerators.

9 VAC 20 Chapter 60 (Hazardous Waste Regulations).

9 VAC 20 Chapter 80 (Solid Waste Management Regulations)

9 VAC 20 Chapter 120 (Regulated Medical Waste Management Regulations)

Air & Waste Management Association. Air Pollution Engineering Manual. New York: Van Nostrand Reinhold, 1992. Chapters 2 and 8.

Brunner, Calvin R. Handbook of Incineration Systems: New York, Mcgraw-Hill, Inc., 1991

U.S. EPA. Compilation of Air Pollutant Emission Factors (AP-42) Volume I: Stationary Point and Area Sources. Research Triangle Park, 1995 (with supplements A and B). Sections 2.0-1, 2.1-1 and 2.3-1

III. GENERAL

A. An incinerator unit is defined as any furnace or device used in the process of burning waste for the primary purpose of destroying matter and/or reducing the volume of

the waste by removing combustible matter. This definition excludes control devices used exclusively for the reduction of NO_x, CO or particulate emissions from other emission units.

B. Waste Types Defined

Paper - paper, wood, cardboard.

Animal - animal tissue (carcasses, organs, solid organic waste).

Crematory - human remains.

Allowable - refuse, which may consist of paper, wood, yard wastes, food wastes, plastics, leather, rubber and other combustibles, alone or in mixtures, and non-combustible materials such as metal, glass and rock.

Special - a waste type not included above. (e.g. tar, paints, solvents, industrial/municipal sludge, radioactive waste, etc.)

Regulated Medical Waste means solid waste subject to 9 VAC 5 Chapter 50, Article 6 (Standards of Performance for Regulated Medical Waste Incinerators)and/or 9 VAC 20 Chapter 120 (Regulated Medical Waste Regulations)

Hazardous Waste means solid waste subject to 9 VAC 20 Chapter 60 (Hazardous Waste Regulations).

The terms municipal, industrial and commercial waste should be avoided as they describe only the source of the waste, not the emission characteristics. The terms are still used in the NSPS standards and Section 129 of the CAAA, however, to describe rule applicability.

C. Other Definitions

Hourly feed rate is defined as the total mass loaded into the primary combustion chamber divided by the time required to completely consume the combustible material in the primary chamber.

Combustible material is defined as any material that burns easily. Auxiliary fuel may be required to initiate or complete the destruction process, but the process is not totally dependent on auxiliary fuel. Animal remains are combustible; bones are not combustible.

Interlock System is defined as a mechanical system to prevent feeding the primary chamber and/or an electrical control to prevent operation of the primary chamber burner until the secondary chamber has attained the minimum required temperature.

D. Emissions Estimates

Annual emissions estimates to determine major source applicability for incinerators covered under this rule should be estimated, in the absence of unit specific performance data, using the emission factors for industrial/commercial multiple chamber units contained in Table 2.1-12 of AP-42.

IV. REQUIREMENTS

A. Applicability

1. All units incinerating waste classified in III.B., above, except Regulated Medical Waste, Hazardous Waste and Special waste. This includes paper, refuse, animal remains and human remains.

2. All facilities with a total rated capacity less than 2000 pounds per hour input, including existing and proposed units. Units at facilities with a total rated capacity equal to or greater than 2000 pounds per hour input are reviewed as a site specific BACT determination.

B. Controls

1. Secondary combustion chamber with auxiliary burner, or an add-on afterburner.

2. The minimum primary chamber temperature shall be the manufacturer's recommended operating temperature.

3. The minimum secondary chamber temperature shall be 1400EF or the manufacturer's recommended operating temperature(provided the DEQ permit engineering analysis finds the manufacturer's recommended operating temperature to be reasonable for particular permit).

4. Auxiliary fuel automatic thermostats to maintain minimum primary and secondary chamber temperatures.

5. Interlock system to prevent combustion in the primary chamber prior to attaining minimum secondary chamber temperature.

6. The burn-down cycle shall be the minimum burn-down time recommended by the manufacturer or the time required to consume all **combustible material**, whichever is greater.

C. Particulate Matter (PM) Emissions

1. Assume PM = PM_{10}, unless otherwise documented.

2. Allowed emissions = 0.10 grains per dry standard cubic foot of exhaust gas corrected to 12 percent carbon

dioxide or 7 percent oxygen. Grains/dscf shall be corrected to 12% CO_2 without the contribution of auxiliary fuel CO_2 when using a fuel other than natural gas or LPG.

D. Carbon Monoxide (CO) Emissions

1. 100 ppmvd one hour average corrected to 12% CO_2 or 7% O_2 determined by compliance test.

E. Toxic (Hazardous Air) Pollutants

Toxic (HAPs) pollutants shall be reviewed, as applicable, on a case-by-case basis.

F. Visible Emissions Limit

1. The allowed limit for stack exhaust gases shall be ten percent opacity.

G. Testing

1. Initial compliance tests shall be required as follows:

a. PM and CO emissions.

b. Opacity

2. Incinerators which are of standardized manufacture and are shipped as assembled units from the factory of manufacture <u>may</u> be exempt from on-site initial PM and CO compliance testing, provided that:

a. The manufacturer has obtained a satisfactory test on a duplicate unit of similar size and design certified by a registered engineer, and

b. Such test has been certified for the same type of waste as designated for the unit subject to the permit, and

c. Such test results are submitted to the DEQ and found acceptable (waste type, unit design, acceptable feed range, equivalent operating parameters, equivalent auxiliary fuel, acceptable methodology).

3. Required on-site testing shall be done while the unit is operated at 90 percent or greater of maximum rated capacity and operated by trained plant personnel only.

H. Monitoring

1. Continuous measurement and display are required for primary and secondary chamber temperatures. Thermocouples shall be located at or near the primary and secondary chamber exits.

I. Notification

Determined on a case by case basis, as applicable, with regard to total emissions allowed and scheduled public hearings.

The permits processed under this boilerplate normally do not require notification or public participation unless adverse comments are obtained as a result of obtaining the Local Government Notification Form (if the facility is a greenfield site).

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